PATENT COOPERATION TREATY

PCT

TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference MMYWO041113P	FOR FURTHER ACTION	See Form PCT/IPEA/416				
International application No. PCT/JP2004/016940	International filing date (day/month/)	Priority date (day/month/year) 19.11.2003				
International Patent Classification (IPC) or national classification and IPC C08J3/12, 9/32, C09K3/00						
Applicant MATSUMOTO YUSHI-SEIYAKU CO., LTD.						
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.						
2. This REPORT consists of a total of	7 sheet	s, including this cover sheet.				
3. This report is also accompanied by A	NNEXES, comprising:					
a. (sent to the applicant and	to the International Bureau) a total of	sheets, as follows:				
sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).						
sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental						
	Box. b. (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))					
		, containing a sequence listing and/or tables				
-	related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).					
This report contains indications relati	ng to the following items:					
Box No. I Basis of the	report					
Box No. II Priority						
Box No. III Non-establi	shment of opinion with regard to nove	lty, inventive step and industrial applicability				
Box No. IV Lack of uni	ty of invention					
DON 110. 1						
Box No. VI Certain doc	Box No. VI Certain documents cited					
Box No. VII Certain defe	Box No. VII Certain defects in the international application					
Box No. VIII Certain observations on the international application						
Date of submission of the demand	Date of compl	Date of completion of this report				
Name and mailing address of the IPEA/JP	Authorized of	Authorized officer				
Facsimile No.	Telephone No	Telephone No.				

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016940

Box	No. I	Basis of the report			
1.		h regard to the language, this report is based on the internatio cated under this item.	nal application in the language in v	which it was filed, unless otherwise	
	This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:				
		international search (Rule 12.3 and 23.1(b))			
		publication of the international application (Rule 12.4			
_	XX7:41	international preliminary examination (Rule 55.2 and/	,		
2.	With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):				
		the international application as originally filed/furnished			
	\bowtie	the description:			
		pages 2-4,7-11,14-16,18-22,24-52		as originally filed/furnished	
		pages* _1,5,6,12,13,17,23	received by this Authority on _	10.05.2005	
		pages*	received by this Authority on _		
	\boxtimes	the claims:			
		nos. 2-34		as originally filed/furnished	
		nos.*	as amended (together	with any statement) under Article 19	
		nos.* _ 1	received by this Authority on _	10.05.2005	
		nos.*	received by this Authority on _		
	\boxtimes	the drawings:			
		sheets 1/1		as originally filed/furnished	
		sheets*			
		sheets*	received by this Authority on		
		a sequence listing and/or any related table(s) – see Supplem			
3.		The amendments have resulted in the cancellation of:			
		the description, pages			
		the claims, nos.			
		the drawings, sheets/figs			
		the sequence listing (specify):			
		any table(s) related to sequence listing (specify):			
4.		This report has been established as if (some of) the amend they have been considered to go beyond the disclosure as fil			
		the description, pages			
		the claims, nos.			
		the drawings, sheets/figs			
		the sequence listing (specify):			
		any table(s) related to sequence listing (specify):			
*	If ite	em 4 applies, some or all of those sheets may be marked "sup	erseded."	_	

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement					
1.	Statement				
	Novelty ((N)	Claims	1-34	YES
			Claims		NO
	Inventive	step (IS)	Claims	1-34	YES
			Claims		NO
	Industrial	l applicability (IA)	Claims	1-34	YES
			Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 2001-151895 A (Matsumoto Yushi Seiyaku Co., Ltd.), 05 June 2001

Document 2: EP 1288727 A1 (Kureha Kagaku Kogyo Kabushiki Kaisha), 05 March 2003

Document 3: JP 11-269343 A (Inoac Corp.), 05 October 1999

Claims 1 to 10

The invention set forth in claims 1 to 10 involves an inventive step in relation to document 1 cited in the international search report.

Document 1 does not disclose the feature wherein a gaseous fluid that contains thermally expandable microspheres is sprayed from a dispersion nozzle so that the thermally expandable microspheres are dispersed in a stream of hot air, which causes the dispersed thermally expandable microspheres to expand by heating said thermally expandable microspheres to a temperature higher than the expansion initiation temperature thereof. On the other hand, the invention set forth in the abovementioned claims of the present application exhibits an advantageous effect in that it is possible to produce thermally expanded microparticles that exhibit little change in the variation coefficient of the particle size

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

distribution during expansion and have an extremely low content of agglomerated particles or unexpanded thermally expandable microspheres as a result of the feature in question.

Claims 11 to 20

The invention set forth in claims 11 to 20 involves an inventive step in relation to document 1 cited in the international search report.

Document 1 does not disclose the feature wherein the thermally expanded microspheres comprise 5% or less by weight of agglomerated particles and 5% or less by weight of microspheres that have a true specific gravity of 0.79 g/cc or higher at a temperature of 25°C. On the other hand, the invention set forth in the abovementioned claims of the present application exhibits an advantageous effect in that the thermally expanded microspheres exhibit little change in the variation coefficient of the particle size distribution during expansion and have an extremely low content of agglomerated particles or unexpanded thermally expandable microspheres and as a result of the feature in question.

Claims 21 to 29

The invention set forth in claims 21 to 29 involves an inventive step in relation to document 1 cited in the international search report.

Document 1 does not disclose the feature wherein the thermally expandable microspheres exhibit an expansion factor of over 100% at the maximum expansion temperature, comprise 5% by weight or less of agglomerated microspheres, and comprise 5% by weight or

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

less of microspheres and have a true specific gravity of 0.79 g/cc or higher at a temperature of 25°C. On the other hand, the invention set forth in the abovementioned claims of the present application exhibits an advantageous effect in that it is difficult to destroy the thermally expandable microspheres by means of an external force as a result of the feature in question.

Claims 30 and 31

The inventions set forth in claims 30 and 31 involve an inventive step in relation to document 1 cited in the international search report.

Document 1 does not disclose hollow compositions or hollow molded articles that contain the abovementioned thermally expanded microspheres and/or the abovementioned thermally expandable microspheres. On the other hand, the inventions set forth in the abovementioned claims of the present application exhibit an advantageous effect in that the inventions do not undergo cure shrinkage during the molding process or thermosettling over time as a result of the feature in question.

Claims 32 to 34

The inventions set forth in claims 32 to 34 involve an inventive step in relation to document 1 cited in the international search report.

Document 1 does not disclose the feature wherein the thermally expandable microspheres are configured from an outer shell, which comprises a thermoplastic resin obtained by polymerizing a monomer mixture that contains 20 to 80% by weight of a nitrile-based monomer and 80 to 20% by weight of a carboxyl group-containing monomer as

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essential constituents, and a blowing agent, which comprises a fluorinated compound with a carbon number of 2 to 10 that has an ether structure and does not include chlorine atoms or bromine atoms. On the other hand, the invention set forth in the abovementioned claims of the present application exhibits an advantageous effect in that the abovementioned thermally expandable microspheres are capable of serving as the starting material for the abovementioned thermally expanded microspheres and the abovementioned thermally expandable microspheres as a result of the feature in question.

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Box	No. VI	Certain documents	cited					
1.	Certain publi	shed documents (Rule	70.10)					
		Application No. Patent No.		Publication date (day/month/year)	Filing date (day/month/year	Priority date (valid claim) (day/month/year)		
	WO 2	2004/74396	A1	02.09.2004	23.02.20	24.02.2003		
	[E,2	A.]						
2.	Non-written o	disclosures (Rule 70.9))					
	K	and of non-written dis	closure	Date of non-written d (day/month/yec		Date of written disclosure eferring to non-written disclosure (day/month/year)		
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